

AAAAAAAAA A

1828

&lt;210&gt; 2

&lt;211&gt; 458

&lt;212&gt; PRT

&lt;213&gt; Babesia caballi

&lt;400&gt; 2

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Met Ala Pro Ser Asp Ser Val Gly Asp Val Thr Lys Thr Leu Leu Ala
 1             5             10             15
Ala Ser Glu Ser Val Asp Ser Ala Ala Asn Ala Tyr Met Ile Asn Ser
      20             25             30
Asp Met Ser Asp Tyr Leu Ser Ala Val Ser Asp Asn Phe Ala Glu Arg
      35             40             45
Ile Cys Ser Gln Val Pro Lys Gly Ser Asn Cys Ser Ala Ser Val Ser
      50             55             60
Ala Tyr Met Ser Arg Cys Ala Lys Gln Asp Cys Leu Thr Leu Gln Ser
      65             70             75             80
Leu Lys Tyr Pro Leu Glu Ala Lys Tyr Gln Pro Leu Thr Leu Pro Asp
      85             90             95
Pro Tyr Gln Leu Glu Ala Ala Phe Ile Leu Phe Lys Glu Ser Asp Ala
      100            105            110
Asn Pro Ala Asn Ser Thr Glu Lys Arg Phe Trp Met Arg Phe Arg Arg
      115            120            125
Gly Lys Asn His Ser Tyr Phe His Asp Leu Val Phe Asn Leu Leu Glu
      130            135            140
Lys Asn Val Thr Arg Asp Ala Asp Ala Thr Asp Ile Glu Asn Phe Ala
      145            150            155            160
Ser Arg Tyr Leu Tyr Met Ala Thr Leu Tyr Tyr Lys Thr Tyr Thr Asn
      165            170            175
Val Asp Glu Phe Gly Ala Ser Phe Phe Asn Lys Leu Ser Phe Thr Thr
      180            185            190
Gly Leu Phe Gly Trp Gly Ile Lys Arg Ala Leu Lys Gln Ile Ile Arg
      195            200            205
Ser Asn Leu Pro Leu Asp Ile Gly Thr Glu His Ser Val Ser Arg Leu
      210            215            220
Gln His Ile Thr Ser Ser Tyr Lys Asp Tyr Met Asp Thr Gln Ile Pro

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225	230	235	240
Ala Leu Pro Lys Phe	Ala Lys Arg Phe	Ser Leu Met Val	Val Gln Arg
245	250	255	
Leu Leu Ala Thr Val	Ala Gly Tyr Val	Asp Thr Pro Trp	Tyr Lys Lys
260	265	270	
Trp Tyr Met Lys Leu	Lys Asn Phe Met	Val Asn Arg Val	Phe Ile Pro
275	280	285	
Thr Lys Lys Phe Phe	Asn Lys Glu Ile	Arg Glu Pro Ser	Lys Ala Leu
290	295	300	
Lys Glu Lys Val Ser	Thr Asp Thr Lys	Asp Leu Phe Glu	Asn Lys Ile
305	310	315	320
Gly Gln Gly Thr Val	Asp Phe Phe Asn	Lys Glu Ile Arg	Asp Pro Ser
325	330	335	
Lys Ala Leu Lys Glu	Lys Val Ser Asn	Asp Ala Lys Asp	Leu Phe Glu
340	345	350	
Asn Lys Ile Gly Gln	Gly Thr Val Asp	Phe Ile Asn Asn	Glu Ile Arg
355	360	365	
Asp Pro Ser Lys Ala	Leu Ile Arg Lys	Val Ser Thr Gly	Ala Glu Asp
370	375	380	
Leu Phe Glu Asn Lys	Ile Gly Gln Gly	Thr Val Asp Phe	Ile Asn Asn
385	390	395	400
Glu Ile Arg Asp Pro	Ser Lys Ala Leu	Ile Arg Lys Val	Tyr Thr Glu
405	410	415	
Ala Asp Asp Leu Phe	Glu Asn Lys Ile	Gly Gln Gly Thr	Val Asp Phe
420	425	430	
Ile Asn Lys Glu Ile	Arg Asp Pro Ser	Lys Ala Leu Ile	Arg Lys Val
435	440	445	
Ser Thr Glu Ala Asp	Asn Leu Leu Glu	Lys	
450	455		

## CLAIMS

1. A gene encoding a protein from merozoite of *Babesia caballi*.

2. The gene of claim 1 wherein said protein is a protein that has the amino acid sequence shown in SEQ ID NO: 2, or a protein that has the amino acid sequence shown in SEQ ID NO: 2 with one to several amino acid residues therein being deleted, substituted or added and that is immunologically reactive with an antibody or antiserum elicited by a 48kDa protein of rhoptry of *Babesia caballi* merozoite.

3. The gene of claim 1 or 2 wherein said gene has the nucleotide sequence shown in SEQ ID NO: 1, or has a nucleotide sequence that hybridizes to a complementary sequence to the nucleotide sequence shown in SEQ ID NO: 1 and encodes a protein that is immunologically reactive with an antibody or antiserum elicited by a 48kDa protein of rhoptry of *Babesia caballi* merozoite.

4. A recombinant protein from merozoite of *Babesia caballi*.

5. The recombinant protein of claim 4 wherein said protein has the amino acid sequence shown in SEQ ID NO: 2, or has the amino acid sequence shown in SEQ ID NO: 2 with one to several amino acid residues therein being deleted, substituted or added and is immunologically reactive with